

Matus et al.

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REMARKS

Claims 1-22 are pending in the present application. In the Office Action mailed December 8, 2004, the Examiner rejected claims 5, 14, and 18-22 under 35 U.S.C. §112, second paragraph, as being indefinite. The Examiner further rejected claims 1-13, 15-18, and 20-22 under 35 U.S.C. §102(b) as being anticipated by Schneider et al. (USP 5,868,869). Claims 14 and 19 were rejected under 35 U.S.C. §103(a) as being unpatentable over Schneider et al.

The Examiner rejected claim 5 under §112, second paragraph, for lacking antecedent basis for "the welding-type plasma torch." Applicant has amended the claim to correct this typographical error by removing "welding-type." Accordingly, Applicant believes claim 5 complies with §112, second paragraph.

The Examiner also rejected claims 14 and 18-22 under §112, second paragraph, because the term "indicator" was unclear. Applicant has amended claim 14 to correct this typographical error. However, with respect to claims 18-22, only claim 19 included the typographical error of "indicator." As such, claim 19 has been amended to correct this typographical error. Applicant believes claims 14 and 18-22 are now in compliance with §112, second paragraph.

Before addressing the substantive rejection of claims 1-22, Applicant wishes to note that claim 1 has been amended to correct a typographical error. Specifically, claim 1 called for "a processing unit disposed within the plasma torch and configured to control the plasma cutting power source of a plasma cutting process." However, this element clearly should call for "a processing unit disposed within the plasma torch and configured to control the plasma cutting power source during a plasma cutting process." As such, Applicant has amended claim 1 to correct this typographical error.

The Examiner rejected claims 1-13, 15-18, and 20-22 as being anticipated by Schneider et al. However, when properly interpreted, Schneider et al. neither teaches nor suggest that which is claimed. With respect to claim 1, the Examiner asserted that Figs. 1 and 2 of Schneider et al. teach a plasma cutting system including "a processing unit disposed within the plasma torch and configured to control the plasma cutting power source of a plasma cutting process," as claimed. To draw this conclusion, Schneider et al. must be interpreted illogically. That is, the rejection is predicated on a comparison of nomenclature without consideration of how terms are used or defined within the reference compared to how they are used and defined with respect to the claimed invention.

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Specifically, when describing Figs. 1 and 2, Schneider et al. refers to element 100 as a "plasma cutting torch." *See* col. 3, lns. 11-43. However, both Figs. 1 and 2 are clear that element 100 indicates the entire plasma cutting system. That is, element 100 includes both the DC power supply 102 and output terminals W, A, and E. Schneider et al., therefore, uses the term "plasma cutting torch" and element 100 to refer to the entire "plasma cutting system." In fact, Schneider et al. does not show a "plasma cutting torch" as defined in the claimed invention. That is, Figs. 1 and 3 of the pending application clearly show that the "torch 16" is separate and distinct from the "power source 12." Further, claim 1 is clear that the "plasma torch" does not include the "plasma cutting power source" because the "plasma torch [is] operationally connected to the plasma cutting power source." Therefore, it is clear that the "plasma cutting torch 100" of Schneider et al. cannot be said to teach or suggest the claimed "plasma torch." Rather, a logical comparison of Schneider et al. to the claimed invention, at most, leads to the conclusion that element 100 of Schneider et al. teaches a "plasma cutting system."

For example, when attempting to apply Schneider et al. to claim 1, Schneider must first teach a "plasma cutting system." As stated, this must be element 100. However, if the Examiner's position is applied and element 100 is the claimed "plasma torch", how does Schneider et al. teach that the plasma torch is "operationally connected to the plasma cutting power source" when the plasma torch of Schneider et al. includes the power source 102? The only logical interpretation is that Schneider et al. teaches a plasma cutting system 100 that includes a plasma cutting power source 102. Moreover, one skilled in the art will readily recognize that a "plasma torch" does not have a DC power supply. As such, Schneider et al. does not show any "plasma torch", as claimed.

Therefore, Schneider et al. clearly does not teach or suggest that which is claimed. That is, Schneider et al. teaches a plasma cutting system 100 that includes a DC power supply 102. The DC power supply 102 includes a sensor 106 configured to monitor a pilot circuit 104 and control circuit 108. Therefore, when properly interpreted, Schneider et al. teaches that the plasma cutting system 100 includes the pilot circuit 104 and control circuit 108. That is, though Schneider et al. states that the "plasma cutting torch 100 includes a DC power supply 102, a pilot circuit 104, a sensing circuit 106 and a control circuit 108," the proper interpretation when compared to the claimed invention is that the plasma cutting *system* 100 "includes a DC power supply 102, a pilot circuit 104, a sensing circuit 106 and a control circuit 108." Col. 3, lns. 11-13. Accordingly, Schneider et al. does not even show a "plasma cutting torch," as defined in the claimed invention. Therefore, though the Examiner has asserted that the pilot circuit 104 and/or

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control circuit 108 teaches the claimed "processing unit," Schneider et al. does not teach that such is "disposed within the plasma torch," as claimed.

Nevertheless, even assuming *arguendo* that the pilot circuit 104 or control circuit 108 may be included in some plasma torch that is not shown, neither the pilot circuit 104 nor the control circuit 108 is "configured to control the plasma cutting power source during a plasma cutting process." Rather, the pilot circuit 104 and control circuit 108 are configured to only control the operation of a pilot arc. *See* col. 4, lns. 3-15. One of ordinary will readily recognize that a pilot arc is used to generate a cutting arc but does not perform a cutting process. Therefore, even if pilot circuit 104 or control circuit 108 is disposed in some torch that is not shown, it does not "control the plasma cutting power source during a plasma cutting process," as claimed.

For at least these reasons, claim 1 is patentably distinct from the art of record. Accordingly, claims 2-11 are in condition for allowance at least pursuant to the chain of dependency.

Regarding claim 12, the Examiner rejected the claim under the same basis as claim 1. However, claim 12 calls for a controller that is "disposed within a plasma cutting torch." As shown above, Schneider et al. does not teach or suggest that any controller is "disposed within a plasma cutting torch." Furthermore, claim 12 is clear that the controller is configured to "receive operational feedback regarding a plasma cutting process." As previously shown, Schneider et al. teaches a system including a pilot circuit 104 and control circuit 108 configured to control the operation of a pilot arc. *See* col. 4, lns. 3-15. Again, one of ordinary will readily recognize that a pilot arc is used to generate a cutting arc but does not perform a cutting process. Therefore, neither the pilot circuit 104 nor the control circuit 108 are configured to "receive operational feedback regarding a plasma cutting process," as claimed. For at least these reasons, claim 12 is patentably distinct from the art of record. Accordingly, claims 13-18 are in condition at least pursuant to the chain of dependency.

Regarding claim 18, the Examiner also rejected the claim under the same basis as claim 1. However, claim 18 calls for plasma cutting torch that includes "a torch body enclosing a plasma-cutting electrode, a plurality of sensors disposed within the torch body and configured to provide operational feedback regarding an in-operation plasma cutter, and a processing unit disposed within the torch body to receive feedback from the plurality of sensors and configured to control a plasma cutting process according to the feedback." First, Schneider et al. does not teach "a torch body enclosing a plasma-cutting electrode" because electrode "E" is not shown in either Fig. 1 or 2 to be enclosed by anything. Second, Schneider et al. does not teach or suggest "a

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plurality of sensors.” Rather, Schneider et al. only shows one sensor 106. Third, Schneider et al. teaches that the sensor 106 is disposed in the DC power supply 102 and not “within the torch body.” Fourth, Schneider et al. does not teach any “processing unit disposed within the torch body.” That is, as previously shown with respect to claim 1, the proper interpretation when compared to the claimed invention is that the plasma cutting system 100 “includes a DC power supply 102, a pilot circuit 104, a sensing circuit 106 and a control circuit 108” – not a plasma torch. Col. 3, lns 11-13.

Therefore, for at least these reasons, claim 18 is patentably distinct from the art of record. Accordingly, claims 19-22 are in condition for allowance at least pursuant to the chain of dependency.

While Applicant has previously shown that claims 2-11, 13-17, and 19-22 are in condition for allowance at least pursuant to the chain of dependency, as the Examiner separately addressed claims 14 and 19 as unpatentable over Schneider et al., Applicant wishes to take the opportunity to address the Examiner’s position with respect to claims 14 and 19. Specifically, the Examiner acknowledged that Schneider et al. does not teach sensors including the specific sensors called for in claims 14 and 19. Nevertheless, the Examiner concluded that these very specific sensors are obvious in light of Schneider because “Schneider et al. has disclosed that the sensor circuitry 106 can comprise other types of sensing circuitry including plural sensor that are well known in the art beside current and voltage sensors.” Applicant respectfully disagrees.

Schneider et al. is directed to “a method and apparatus for controlling the pilot arc current in a plasma cutting torch.” Col. 1, lns. 5-7. While Schneider et al. does state that “the current sensing circuit 106 can comprise other types of current sensing circuitry, such as are well known in the art,” it does not teach or suggest “at least one user input sensor, a power source activation sensor, an electrode type indicator, a tip type indicator, a cup position indicator, a consumable indicator, a shorted component indicator, an air pressure indicator, a temperature indicator, a trigger position indicator, a trigger safety indicator, and a voltage drop indicator.” That is, for example, an air pressure indicator is unrelated to current sensing and it would be illogical for a “current sensor 106” to include an air pressure indicator. The fact that Schneider et al. states that the current sensor may be of various known current sensor circuitry does not provide a basis for concluding that Schneider et al. teaches or suggest the diverse sensor types called for in claims 14 and 19. Rather, it appears that the proffered rejection is based on impermissible hindsight. See MPEP §2145. Therefore, claims 14 and 19 are additionally distinguishable from the art of record.

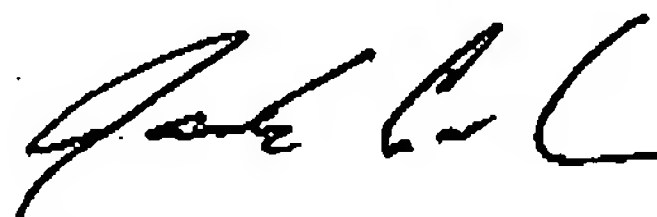
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Therefore, in light of at least the foregoing, Applicant respectfully believes that the present application is in condition for allowance. As a result, Applicant respectfully requests timely issuance of a Notice of Allowance for claims 1-22.

Applicant appreciates the Examiner's consideration of these Amendments and Remarks and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.

Respectfully submitted,



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